

Claims

Having described the invention, we claim:

1. A voice amplifier for attachment to a mask, the voice amplifier comprising:
a sound reflector having a reflector surface that faces outwardly of the mask when the voice amplifier is attached to the mask;
a base connected with the sound reflector; and
a speaker supported on the base and facing inwards towards the reflector surface.
2. A voice amplifier according to claim 1 wherein the sound reflector supports the base and the speaker on the mask.
3. A voice amplifier according to claim 1 wherein the speaker has a conical configuration centered on an axis and tapering radially inward in a direction away from the mask.
4. A voice amplifier according to claim 1 wherein the sound reflector and the base are spaced apart thereby defining a peripheral gap between them, sound waves emitted from the speaker being reflected off the sound reflector and exiting the voice amplifier through the peripheral gap.
5. A voice amplifier according to claim 4 wherein the sound reflector has a circular shape with a perimeter and an outer diameter, the base is comprising a lower base portion and an upper base portion, the upper base portion having a generally semicircular shape with an outer diameter that is smaller than the outer diameter of the perimeter of the sound reflector thereby defining a gap between the upper base portion and the perimeter of the sound reflector.
6. A voice amplifier according to claim 1 wherein sound waves that emanate from the speaker inward towards the sound reflector, reflect off the sound reflector and exit the voice amplifier through an outer peripheral gap between the base and the perimeter of the sound reflector and thence travel outwardly from the mask.

7. A voice amplifier according to claim 1 comprising a switch and a movable switch actuator mounted on the front of the voice amplifier.

8. A voice amplifier according to claim 1 comprising a magnetically actuated switch and a movable magnetic switch actuator mounted on the front of the voice amplifier.

9. A voice amplifier as set forth in claim 1 including a sound reflector having a reflector surface that faces outwardly of the mask when the voice amplifier is attached to the mask, said base being connected with said sound reflector; and said speaker being supported on said base and facing inwards towards said reflector surface.

10. A voice amplifier as set forth in claim 1 wherein said cover has an outer surface portion facing away from the mask, said voice amplifier further comprising a circuit board located within the housing at a location not between the speaker and the outer surface portion of the cover.

11. A voice amplifier as set forth in claim 1 further including a cover connected with the base and wherein the cover has a front wall with a front surface facing away from the mask when the voice amplifier is attached to the mask, the speaker has a wide end and a narrow end, the narrow end of the speaker being located closer to the front wall of the cover than the wide end, and the cover front wall has a profile that follows the profile of the speaker in a direction from the narrow end of the speaker to the wide end of the speaker.

12. A voice amplifier for attachment to a mask, the voice amplifier comprising:
a base;
a speaker supported on the base; and
a cover connected with the base to form a housing enclosing the speaker, the cover having a front wall with a front surface facing away from the mask when the voice amplifier is attached to the mask;
the speaker having a wide end and a narrow end, the narrow end of the speaker being located closer to the front wall of the cover than the wide end,

the cover front wall having a profile that follows the profile of the speaker in a direction from the narrow end of the speaker to the wide end of the speaker.

13. A voice amplifier as set forth in claim 12 wherein the speaker has a conical or frustoconical configuration centered on an axis and the cover front wall has a profile that mimics the speaker configuration above the axis of the speaker.

14. A voice amplifier according to claim 12 further comprising an on/off switch assembly including a magnetic actuator that is located on an outer surface of the cover facing away from the mask, and a magnetically actuated switch located inward of the cover.

15. A voice amplifier for attachment to a mask, the voice amplifier comprising:
a sound reflector;
a base connected with the sound reflector;
a cover having an outer surface portion facing away from the mask, the cover being attached to the base to form with the base a housing;
a speaker located within the housing; and
a circuit board located within the housing at a location not between the speaker and the outer surface portion of the cover.

16. A voice amplifier according to claim 15 wherein the speaker faces toward the sound reflector and has a portion closest to the sound reflector, and the circuit board is located within the housing at a location outward of the speaker portion closest to the sound reflector.

17. A voice amplifier according to claim 16 further comprising an on/off switch assembly including a magnetic actuator that is located on the outer surface of the cover facing away from the mask.

18. A voice amplifier according to claim 17 wherein the on/off switch assembly also includes a magnetically actuated switch located on the circuit board inward of the cover.

19. A voice amplifier for attachment to a mask, the voice amplifier comprising:
a housing including a base and a cover;
an on/off switch assembly including a magnetically actuatable switch and a magnetic actuator;
an amplifier inside the housing for amplifying a signal received from a microphone, the amplifier being controlled by the magnetically actuatable switch; and
a speaker connected with the amplifier inside the housing, the speaker converting the signal received from the amplifier into sound waves.

20. A voice amplifier according to claim 19 wherein the magnetic actuator is supported on a movable member on the cover for movement between a first position and a second position, and the magnetically actuated switch is located on a circuit board inside the housing, the magnetically actuated switch moving between an on condition and an off condition in response to movement of the magnetic actuator between the first position and the second position.

21. A voice amplifier according to claim 20 wherein the magnetically actuated switch is a reed switch.

22. A voice amplifier according to claim 19 wherein the magnetic actuator is pivotable within a range of movement between an on position and an off position and is mounted on the front of the voice amplifier.

23. A voice amplifier according to claim 19 wherein the magnetic actuator is mounted on the front of the voice amplifier.

24. A voice amplifier according to claim 19 wherein the magnetic actuator is mounted on the front of the voice amplifier and is pivotable within a range of movement between an on position and an off position, and the magnetically actuated switch is located on a circuit board inside the housing, the magnetically actuated switch moving between an on condition and an off

condition in response to movement of the magnetic actuator between the first position and the second position.

25. A voice amplifier as set forth in claim 19 including a sound reflector having a reflector surface that faces outwardly of the mask when the voice amplifier is attached to the mask, said base being connected with said sound reflector; and said speaker being supported on said base and facing inwards towards said reflector surface.

26. A voice amplifier as set forth in claim 19 comprising a sound reflector, said base being connected with the sound reflector, said cover having an outer surface portion facing away from the mask, said voice amplifier further comprising a circuit board located within the housing at a location not between the speaker and the outer surface portion of the cover.

27. A voice amplifier as set forth in claim 19 wherein the cover has a front wall with a front surface facing away from the mask when the voice amplifier is attached to the mask, the speaker has a wide end and a narrow end, the narrow end of the speaker being located closer to the front wall of the cover than the wide end, and the cover front wall has a profile that follows the profile of the speaker in a direction from the narrow end of the speaker to the wide end of the speaker.